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PART 1 - GENERAL

1.01 SCOPE

- A. The WORK to be performed under this Contract shall consist of furnishing and installing all tools, equipment, materials, supplies, and manufactured articles and furnishing all labor, transportation, and services, including fuel, power, water, and essential communications, and performing all work, or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents. The WORK shall be complete, and all work, materials, and services not expressly indicated or called for in the Contract Documents which may be necessary for the complete and proper construction of the WORK in good faith shall be provided by the CONTRACTOR as though originally so indicated, at no increase in cost to the TOWN.
- B. The H.A.T. Landscaping Improvements Project Contract Documents are comprised of two volumes and are summarized as follows:

Volume I Front End Documents and Technical Specifications

Volume II General Drawings and Standard Details

1.02 WORK COVERED BY CONTRACT DOCUMENTS

- A. The work of this Contract comprises the construction of Landscaping Improvements on Hibiscus Avenue, Allenwood Drive and Tropic Drive (H.A.T) for the Town of Lauderdale by the Sea. The work will include but not be limited to site preparation, earthwork, swale regrading, tree planting, and tree removal.
- B. The general location of the project site is as follows:

The limits of the H.A.T. Landscaping Improvements are bounded by Tropic Drive to the north, Allenwood Drive to the south, Seagrape Drive to the east, and the Intracoastal Waterway to the west.
- C. The contract time required to Substantial Completion for this project will be 30 days from the Notice to Proceed from the Town. The Final Completion is required to be completed within 30 days of Substantial Completion date.

1.03 NOTICE TO BIDDERS

- A. The successful bidder, in order to be considered responsive, must possess the appropriate licenses.
- B. It should also be noted that the successful bidder will, at the time of the pre-work conference, be required to show that each of the CONTRACTOR'S subcontractors must possess the appropriate licenses.

1.04 STANDARD SPECIFICATION

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- A. All materials and workmanship shall meet the requirements of "The Minimum Standards Applicable to Public Rights-of-Way under Broward County Jurisdiction", April 1, 1995 (to be referred to as "Minimum Standards") and the Florida Department of Transportation "Standard Specifications for Road and Bridge Construction," dated 1991, and its supplements, and the Florida Department of Transportation "Roadway and Traffic Design Standards" dated January 1994, and "Structures Standards," dated 1992.

1. These Special Provisions are supplemental to the above Specifications and Standards.

1.05 SITE INVESTIGATION

- A. The CONTRACTOR, by virtue of signing the Contract, acknowledges that CONTRACTOR and all subcontractors have satisfied themselves to the nature and location of the work, the general and local conditions including, but not restricted to: those bearing upon transportation; disposal, handling and storage of materials; access roads to the site; the conformation and conditions of the work area; and the character of equipment and facilities needed preliminary to and during the performance of the work. Failure on the part of the CONTRACTOR to completely or properly evaluate the site conditions shall not be grounds for additional compensation.
- B. Soil boring information will not be furnished to the CONTRACTOR. The CONTRACTOR, by virtue of signing the Contract, acknowledges that CONTRACTOR and subcontractors have satisfied themselves as to the nature and extent of soil and (underground) water conditions on the project site. No additional payment will be made to the CONTRACTOR because of differences between actual conditions and those shown by the boring logs.

1.06 WORK BY OTHERS

- A. Concurrent Work by Other Contractors. The CONTRACTOR'S attention is directed to the fact that other contractors may conduct work at the site during the performance of the WORK under this Contract. The CONTRACTOR shall conduct its operations so as to cause little or contractors to provide continued safe access to their respective portions of the site, as required to perform work under their respective contracts.
- B. Interference With Work On Utilities. The CONTRACTOR shall cooperate fully with all utility forces of the TOWN or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities which interfere with the progress of the WORK, and shall schedule the WORK so as to minimize interference with said relocation, altering, or other rearranging of facilities.

1.07 WORK SEQUENCE

- A. The CONTRACTOR shall schedule and perform the work in such a manner as to result in the least possible disruption to the public's use of roadways, driveways, and utilities. Utilities shall include but not be limited to water, sewerage, drainage structures, ditches and canals, gas, electric, television and telephone. Prior to commencing with the WORK, CONTRACTOR shall perform a location investigation of existing underground utilities and facilities and shall have obtained all required permits and permissions, CONTRACTOR shall also deliver written notice to the TOWN, ENGINEER, and property occupants (private and public) of all planned disruption

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to roadway, driveways, temporary displacement of fences, mailboxes, street signs and traffic signs, and utilities 72 hours in advance of disruption.

- B. CONTRACTOR shall sequence the work so as to minimize impact on residents. CONTRACTOR shall notify Broward County Traffic Engineering School Coordinator, Broward Sheriff's Office, Fire Department and Post Office 14 days prior to disruption of roadway.

1.08 WORK SCHEDULE

- A. The contract time required to Substantial Completion for the project will be 30 days. The Final Completion is required to be completed within 30 days of Substantial Completion date. Time is of the essence in completing this project. Because time is of the essence the CONTRACTOR shall commit the necessary resources to this project to complete it in a timely manner. Those resources may include multiple working crews, working over time, etc. Because time is of the essence, the CONTRACTOR'S construction progress will be monitored closely on a weekly basis. The Construction progress will be measured with the construction schedule submitted by the CONTRACTOR. If the ENGINEER determines that the CONTRACTOR does not meet the submitted construction, the CONTRACTOR will be required to commit those resources necessary to ensure the completion of the project in a timely manner including working over time, adding other work crews, etc. All costs incurred to implement measure to complete the work in timely manner will be borne by the CONTRACTOR at no additional cost to the TOWN.
- B. SCHEDULE
 - 1. CONTRACTOR shall submit scheduling information for the work. No separate payment shall be made for preparation and/or revision of the schedule.
 - 2. Contract time required to Substantial Completion for the project will be 30 days. The Final Completion is required to be completed within 30 days of Substantial Completion date.
 - 3. CONTRACTOR will submit shop-drawings a minimum of 10 days before start-up of construction.

1.09 COMPUTATION OF CONTRACT TIME

- A. It is the CONTRACTOR'S responsibility to provide clear and convincing documentation to the ENGINEER as to the effect additional work will have with respect to additional contract time extension that may be justified. If additional quantities of work can be carried out concurrent with other existing construction activities without disrupting the critical path of the project then no contract time extension will be granted. The CONTRACTOR is obligated to provide documentation to the ENGINEER if additional elements of work affect the critical path of the project. If work set forth in the original scope of the project is deleted, the contract time may be reduced. This contract is a calendar day contract. While the CONTRACTOR may be granted time to suspend work operations for vacations or holidays, contract time will not be suspended. During suspensions, the CONTRACTOR shall be responsible for all maintenance of traffic and liability without additional compensation from the TOWN. Any additional cost accrued by inspector overtime work (i.e. weekends and holidays) will be billed at an hourly rate of \$70.00/hr.

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1.10 CONTRACTOR USE OF PREMISES

- A. The CONTRACTOR'S use of the project site shall be limited to its construction operations. The CONTRACTOR will arrange for storage of materials and a copy of an agreement for use of other property shall be furnished to the ENGINEER.

1.11 PRE-CONSTRUCTION CONFERENCE

- A. After the award of Contract, a Pre-construction Work Conference will be held between the CONTRACTOR, the ENGINEER, the TOWN, other interested Agencies, representatives of Utility Companies and others affected by the work. The ENGINEER will set the time and place of this conference. The CONTRACTOR shall bring to the conference a copy of the proposed work schedule for the approval by the ENGINEER of the proposed methods and manner of executing the work including sequences of operation and time schedule. The work shall be performed in accordance with such schedule or approved amendments thereto.

1.12 UTILITY LOCATIONS

- A. As far as possible, all existing utility lines in the project area have been shown on the plans. However, TOWN does not guarantee that all lines are shown, or that said lines are in their true location. It shall be the CONTRACTOR'S responsibility to identify and locate all underground or overhead utility lines or equipment affected by the project. No additional payment will be made to the CONTRACTOR because of discrepancies in actual and plan location of utilities and damages suffered as a result thereof.
- B. The CONTRACTOR shall notify each utility company involved at least thirty (30) days prior to the start of construction to arrange for positive underground location, relocation or support of its utility where that utility may be in conflict with or endangered by the proposed construction. The CONTRACTOR shall pay for relocation of water mains or other utilities for the convenience of the CONTRACTOR. The CONTRACTOR shall pay for all charges by utility companies for temporary support of its utilities. All costs of permanent utility relocations to avoid conflict shall be the responsibility of the CONTRACTOR and the utility company involved.
- C. The CONTRACTOR shall schedule and coordinate their work in such a manner that they are not delayed by the utility companies relocating or supporting their utilities. No compensation will be paid to the CONTRACTOR for any loss of time or delay.
- D. All overhead, surface, and underground structures and/or utilities encountered are to be carefully protected from damage or displacement. All damage to said structures and/or utilities is to be completely repaired within a reasonable time; needless delay will not be tolerated. The TOWN reserves the right to remedy any damage by ordering outside parties to make repairs at the expense of the CONTRACTOR. All repairs made by the CONTRACTOR are to be made to the satisfaction of the utility owner and shall be inspected by a representative of the utility owner and the ENGINEER.
- E. The CONTRACTOR should be aware of the Sunshine State One Call Center, which has a free locating service for CONTRACTORS and excavators. Within forty-eight hours before excavating, dial toll free 1-800-432-4770, and a locator will be dispatched to the work location.

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CONTRACTOR shall reasonably notify other utility companies not notified by Sunshine State One Call Center.

- F. The permits listed below will be obtained for the project by the TOWN prior to beginning construction. The CONTRACTOR is responsible for compliance with any and all permit conditions. In the event that the TOWN must obtain permits in addition to those listed below, the CONTRACTOR shall not have any claim for damages arising from any delay caused by the TOWN'S obtaining said additional permits.

1. Broward County Environmental Protection and Growth Management Department

- G. The CONTRACTOR shall obtain construction permit and applicable building and other permits from the TOWN. There will be no charge for the TOWN Construction Permits.

1.13 LINE AND GRADE

- A. The ENGINEER has provided vertical and horizontal control for layout of the work in the form of benchmarks and reference points located adjacent to the work. From these controls provided, the CONTRACTOR shall develop and make all detailed surveys needed for construction and shall establish all working points, lines and elevations necessary to perform the work. A Professional Land Surveyor registered in the State of Florida shall supervise this surveying work.

1.14 PROTECTION AND RESTORATION OF SURVEY MONUMENTS

- A. The CONTRACTOR shall carefully protect from disturbance all survey monuments, stakes and bench marks, whether or not established by CONTRACTOR, and shall not remove or destroy any surveying point until it has been properly witnessed by the ENGINEER. All major survey monuments that have been damaged by the CONTRACTOR such as section corners, 1/4 section corners, property corners or block control points shall be replaced at the CONTRACTOR'S expense with markers of a size and type approved by the ENGINEER. The replacement shall be under the supervision of a Florida Registered Land Surveyor where directed by the ENGINEER.

1.15 EQUIPMENT

- A. All equipment necessary and required for the proper construction of all facilities shall be on the construction site, in first-class working condition.

1.16 STORAGE SITES

- A. The CONTRACTOR shall furnish, at CONTRACTOR's expense, properly zoned areas suitable for material storage and equipment service and storage. No material may be stored in the public right of way without prior authorization by the agency having jurisdiction. The CONTRACTOR shall keep these areas in a clean and orderly condition so as not to cause a nuisance or sight obstruction to motorists or pedestrians.

1.17 OWNERSHIP OF EXISTING MATERIALS

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- A. All materials removed or excavated from the job site shall remain the property of TOWN until released by the TOWN, at which time it shall become the property of the CONTRACTOR, who shall dispose of it in a manner satisfactory to the ENGINEER.

1.18 EXCESS MATERIAL

- A. Upon direction of the ENGINEER, all vegetation, debris, concrete or other unsuitable materials shall be disposed of in areas provided by the CONTRACTOR and approved by the ENGINEER. Any excess material desired to be retained by the TOWN shall be delivered by the CONTRACTOR to a designated area the town limits, at no extra cost to the TOWN.

1.19 AUDIO-VISUAL PRECONSTRUCTION RECORD

A. General:

- 1. Prior to beginning the work, the CONTRACTOR shall have a continuous color audio-video tape recording taken along the entire length of the project to serve as a record of preconstruction conditions.

B. Audio-Video Tapes:

- 1. CONTRACTOR shall provide the ENGINEER and the TOWN with one complete set of tapes for each of the project area.

C. Equipment:

- 1. All equipment, accessories, materials and labor to perform this service shall be furnished by the CONTRACTOR.
- 2. The total audio-video system shall reproduce bright, sharp, clear pictures with accurate colors and shall be free from distortion, tearing, rolls or any other form of imperfection. The audio portion of the recording shall reproduce the commentary of the camera operator with proper volume and clarity and be free from distortion and interruptions.
- 3. When conventional wheeled vehicles are used, the distance from the camera lens to the ground shall not be less than twelve feet. In some instances audio-video tape coverage may be required in areas not accessible by conventional wheeled vehicles. Such coverage shall be obtained by walking or special conveyance approved by the ENGINEER.

D. Payment:

- 1. Compensation for the audio-video preconstruction record shall be included in the lump sum price bid for Mobilization.

1.20 ADJUSTING EXISTING VALVES AND METERS

- A. It shall be the CONTRACTOR'S responsibility to coordinate and have all adjustments made to existing water meters, valves, and structures encountered during construction, in order to meet all

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final grades, unless otherwise instructed by the ENGINEER or the respective utility owner. All valves and manholes shall be accessible during all phases of the work for emergency access. Omission of such structures from the Contract Plans does not relieve the CONTRACTOR from making such adjustments as may be deemed necessary. The CONTRACTOR shall take this provision into account when personally investigating the site prior to bidding. No additional payment shall be made for these adjustments.

1.21 ENVIRONMENTAL PROTECTION

- A. The CONTRACTOR shall furnish all labor and equipment and perform all work required for the prevention of environmental pollution during and as a result of the work under this contract. For the purpose of this contract, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life, affect other species of importance to man, or degrade the utility of the environment for aesthetic and recreational purposes. The control of environmental pollution requires consideration of air, water, land and involves noise, solid waste management and management of radiant energy and radioactive materials, as well as other pollutants.
- B. The CONTRACTOR shall take all steps necessary to protect water quality in the connected waters around the project and shall utilize such additional measures as directed by the ENGINEER. Silt screens adjacent to outfall construction shall not be removed until the turbidity of the affected waters is equal to or lower than the ambient turbidity of undisturbed segments of the waterway. Any discharge into existing drainage facilities shall require the approval of the owner of the system. This may require an engineered plan to be furnished at no additional cost to the TOWN.

1.22 MAINTENANCE AND PROTECTION OF TRAFFIC

- A. The CONTRACTOR shall provide all necessary traffic control devices in order to redirect, protect, warn or maintain existing vehicular and pedestrian traffic during the course of construction.

1. CONSTRUCTION PHASING REQUIREMENTS

Following are general requirements for construction phasing to minimize resident disruption, yet maximize cost effectiveness of the construction scheduling.

- a. No two adjacent roadways may be under construction at the same time (i.e. construction shall be on alternating roadways, and every other roadway shall remain open for access). In no case shall more than 50% of all roadways in a section be under construction at one time. At least 50% of all roadways shall have an asphalt surface, either original or new asphalt, at all times. The CONTRACTOR shall make every effort to provide access to driveways at the end of the working day. If a driveway is not accessible, the homeowner should have access to a neighboring swale area for temporary parking. When vehicular access to homes is not possible for parking of vehicles, an area for parking shall be provided within one block of the furthest home effected. This condition is to be avoided whenever possible and shall last no longer than five (5) working days.

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The CONTRACTOR, with the TOWN'S approval, shall coordinate the parking area location. The CONTRACTOR shall lease the property from the landowner, and will provide a compacted, graded parking surface acceptable to the ENGINEER.

1. The CONTRACTOR shall not begin construction on subsequent roadways until the initial roadways under construction are substantially complete. A roadway shall be considered substantially complete when all work is complete except for the last lift of asphalt. All work on private property and landscaping must also be complete before a road is considered substantially complete.
 2. Site restoration work shall be complete on private property within fifteen (15) days after being disturbed.
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- b. Construction within the right of way of affected roads shall be scheduled so that all improvements are completed at once, and the residents are only disrupted for one time period.
 - c. All affected residents and property owners shall be notified by the contractor in writing a minimum of two (2) weeks, or earlier if required by the TOWN, prior to any disruption to or construction in road right-of-ways adjacent to their homes. The notification shall also indicate any special parking or traffic conditions that will affect residents.
 - d. All affected residents shall be notified by the contractor a minimum of forty eight (48) hours, or earlier if required by the TOWN, prior to a shut off of water supply. Any water supply interruptions shall be rescheduled to be as short as possible and not exceed twelve (12) hours.
 - e. Access for emergency vehicles shall be maintained at all times to all homes or businesses. Excavation must be back-filled or barricaded at the end of each workday to prevent hazardous conditions. If a trench, excavation or structure is to be left open, it must be covered with a steel plate and barricaded at the end of each workday or when work will be suspended for more than eight (8) hours.
 - f. Transportation provisions for handicapped or disabled residents shall be made by the CONTRACTOR if construction prevents access to homes.
 - g. The CONTRACTOR shall also make provisions with local bus, school bus, garbage collection, mail delivery and other agencies for continuation of service. A traffic maintenance plan indicating proposed street closings, schedules, and alternate routes, which have been approved by the ENGINEER and Broward County Traffic Engineering, should be submitted to all affected agencies for coordination and routing purposes.
 - h. Materials and equipment shall be stored in a fenced or otherwise enclosed area during non-working hours. Pipe and material shall not be strung out along installation routes for longer than one (1) week prior to installation.

B. TRAFFIC CONTROL

1. The CONTRACTOR is required to submit a conceptual Traffic Control Plan at the Pre-Construction Conference. This preliminary plan should identify the phases of construction that the CONTRACTOR plans to proceed with and identify traffic flows during each phase. The ENGINEER will have ten (10) days to notify the CONTRACTOR of any comments. Once the conceptual plan for maintaining traffic has been approved, the CONTRACTOR will be required to submit a detailed plan showing each phase's Maintenance and Protection Plan prior to starting construction of any phase.
2. The "Maintenance of Traffic" plan shall include pedestrian traffic as well as vehicular traffic.

A safe walk route for all schools within the vicinity of the construction zone shall be maintained during the arrival and dismissal of school. CONTRACTOR shall not block bus access to schools during school hours.

In the case that a designated crossing of any portion of the designated walk route can not be maintained, then the CONTRACTOR shall notify the "School Safety Coordinator" at Broward County Traffic Engineering Division, (954) 484-9600 a minimum of ten (10) working days prior to ceasing that route so that an alternate route can be established with the School and the Enforcing agency.

It shall be the responsibility of the CONTRACTOR for any necessary Construction, Pavement Marking and Signage or any Pedestrian Signalization and/or Signal Modification to accommodate an alternate safe walk route.

Thirty (30) days prior to the beginning of construction the CONTRACTOR shall notify the "School Safety Coordinator" at Broward County Traffic Engineering Division (954) 484-9600, to set up a pre-work meeting.

3. The CONTRACTOR, at all times, shall conduct the work in such a manner as to insure the least obstruction to traffic as is practical. Convenience of the general public and of the residents adjacent to the work shall be provided for in a satisfactory manner, as determined by the ENGINEER.
4. Sidewalks, gutters, drains, fire hydrants and private drives shall, insofar as practical, be kept in condition for their intended uses. Fire hydrants on or adjacent to the work shall be kept accessible to fire apparatus at all times, and no material or obstruction shall be placed within twenty (20) feet of any such hydrant.
5. Construction materials stored upon the public street shall be placed so as to cause as little obstruction to the general public as is reasonably possible.
6. Streets may be closed only as permitted by the approved Maintenance of Traffic Plan, and as directed by the ENGINEER and, whenever the street is not closed, the work must be conducted with the provision for a safe passageway for traffic at all times. The

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CONTRACTOR shall make all necessary arrangements with the ENGINEER concerning maintenance of traffic and selection of detours required.

7. All existing stop and street name signs will be maintained as long as deemed necessary by the ENGINEER.
8. When permission has been granted to close an existing roadway, the CONTRACTOR shall furnish and erect signs, barricades, lights, flags and other protective devices, which shall conform to the requirements, and be subject to the approval of the ENGINEER. The CONTRACTOR shall furnish and maintain proper protective devices at such location for the entire time of closure as the ENGINEER may direct. Signage shall be affected one week before closure.
9. The CONTRACTOR shall furnish a sufficient number of protective devices to protect and divert the vehicular and pedestrian traffic from working areas closed to traffic, or to protect any new work. Failure to comply with this requirement will result in the ENGINEER shutting down the work until the CONTRACTOR provides the necessary protection.
10. Any time traffic is diverted for a period of time that will exceed one-work day temporary pavement markings will be required. Existing pavement markings that conflict with the new work zone traffic pattern must be obliterated. Painting over existing pavement markings (black out) is not permitted.
11. The CONTRACTOR may be required to reposition existing traffic heads in order to maintain traffic flows at diverted intersections. If this should be necessary the CONTRACTOR must submit a plan for approval showing the course of work and the planned repositioning. The Broward County Traffic Engineering Division must approve the plan prior to implementation. No separate payment for repositioning the existing traffic signal heads will be made. The cost of this work shall be included in the bid item for Maintenance of Traffic.

1.23 BASIS OF PAYMENT (SEE SECTION 01025)

1.24 APPLICATION FOR PAYMENT FOR STORED MATERIALS

- A. Application for payment for stored materials may not be made by the CONTRACTOR.

1.25 SPECIAL CONDITIONS FOR CONSTRUCTION BY OTHER AGENCIES

- A. It will be the CONTRACTOR'S responsibility to coordinate construction schedules with other contractors so as to minimize disruptions, and inconveniences. The project site shall be safe at all times for construction workers and residents of the Project area.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01010

PART 1 - GENERAL

1.01 SCOPE

- A. Payment for various items of the Bid Schedule, as further specified herein, shall include all compensation to be received by the CONTRACTOR for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor operations and incidentals appurtenant to the items of work being described, as necessary to complete the various items of the WORK all in accordance with requirements of the Contract Documents, including all appurtenances thereto, and including all costs of permits and cost of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA). No separate payment will be made for any item that is not specifically set forth in the Bid Schedule, and all costs therefore shall be included in the prices named in the Bid Schedule for the various appurtenances needed to complete the items of work.
- B. Payment for the various items of the Bid Schedule shall constitute full compensation for CONTRACTOR's superintendent at the job site full-time during construction, for furnishing and installing all pipe and structures complete in place including but not limited to bends, tees, outlets, fittings, blind flanges and specials, including connections to existing pipelines shown on the Drawings; including surveying both horizontal and vertical control for construction of the roadways, structures, pipeline and appurtenances; including protecting and replacing if necessary existing monuments, control points, found iron rods, valves; including all earthwork, trench excavation as shown on the Drawings, removal and disposal of waste, unsuitable and excess material, furnishing and installing pipe bedding material, all backfill and compaction of native material, and dewatering as required; the restoration of interfering portions of existing service and utility lines that are not included in other bid items and shown on the Drawings, including replacement of sewer lines with ductile iron pipe where the minimum vertical clearances are not met for the sewer line shown; restraint of pipe shown on the Drawings and grouting of pipe joints; including providing the water for pressure testing, cleaning the pipe and disinfection, and disposal of the water as required when completed; furnishing, installation, and removal of test heads, cleanup; and restoration of all improvements incidental to construction for which there are no other bid items; including but not limited to, existing sprinkler systems, and all other work not included in other bid items.
- C. Payment shall also include providing the necessary equipment and labor power to pothole and verify depths and locations of existing utilities sufficiently ahead of construction to avoid conflicts with the design alignment and grade of structures, culverts, storm drains and exfiltration trenches. Conflicts with utilities shown on the Drawings which result from the Contractor's negligence to pothole sufficiently ahead of construction (a minimum of two days ahead of construction of the pipeline or as approved by the ENGINEER) shall be resolved by the Contractor at no additional cost to the TOWN.
- D. Payment for all bid items shall constitute full compensation for the complete installation of each bid item including but not limited to excavation, dewatering, backfill and compaction. The work shall include for all bid items to be completed, tested and ready for acceptance by the appropriate government agency.

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MEASUREMENT AND PAYMENT

- E. No separate payment for pavement restoration will be made unless specifically shown on the plans, called out in the bid schedule, or directed by the ENGINEER. All bid items shall include pavement restoration.

1.02 MOBILIZATION

- A. Payment for Mobilization will include any necessary permit fees.
- B. Payment for mobilization will be made at the lump sum price named in the Bid Schedule. Payment for mobilization will be made in equal monthly amounts during the duration of the original contract time.

1.03 MAINTENANCE OF TRAFFIC

- A. See Section 01010 – 1.22 "Maintenance and Control of Traffic" and all other references to traffic control and maintenance in this document and any regulatory requirements.
- B. Payment for maintenance of traffic will be made at the lump sum price named in the Bid Schedule. Payment for maintenance of traffic will be made in equal monthly amounts during the duration of the contract time.

1.04 CONSTRUCTION ALLOWANCE

- A. The work included in this item is related to project work not identified or reasonably anticipated through the Contract Documents, which includes, but is not limited to, permit allowance to obtain all permits necessary, the relocation of certain existing utility structures and the removal and disposal of any existing utility infrastructure encountered that are deemed unnecessary by the governing utility company. This is an allowance, and any work to be completed under this item must be specifically approved in writing by the OWNER prior to completing the work, including the mutually agreed upon cost of said work.

1.05 REMOVE AND DISPOSE OF EXISTING ASPHALT PAVEMENT

- A. Measurement for payment to remove and dispose of existing pavement will be based upon the actual number of square yards of such pavement actually removed, all in accordance with the Contract Documents.
- B. Payment for removal and disposal of existing pavement will be made at the unit price per square yard of pavement named in the Bid Schedule which price shall constitute full compensation for the removal and disposal of such pavement.

1.06 REMOVE AND DISPOSE OF TREES

- A. Measurement for payment to remove and dispose of existing trees will be based upon the actual number of trees and stumps removed. Said items shall be paid within the following guidelines. All trees and shrubs with less than 3" diameter (as measured by common practice) shall not be compensated for under this line item, but rather included within the payment for CLEAR AND GRADE SWALE. Tree removal will constitute full payment for removal of the entire tree and stump.

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- B. Payment for removal and disposal of trees will be made at the unit price for each tree named in the Bid Schedule which price shall constitute full compensation for the removal and disposal of all trees complete, including stump removal.

1.07 REMOVE AND RELOCATION OF EXISTING TREES

- A. Measurement for payment to remove and relocate existing trees will be based upon the actual number of trees relocated, all in accordance with the Contract Documents.
- B. Payment for removal and relocation of trees will be made at the unit price for each tree named in the Bid Schedule which price shall constitute full compensation for the relocation of all trees complete. No additional compensations will be made for watering and maintaining trees for the duration of the contract.

1.08 FURNISH AND INSTALL TREES

- A. Measurement for payment for furnishing and installing trees will be based upon the actual number, of each tree installed all in accordance with requirements of the Contract Documents.
- B. Payment for furnishing and installing trees will be made at the unit price, each, named in the Bid Schedule which price shall constitute full compensation for the plant material and complete installation. No additional compensations will be made for watering, fertilizing, staking and any other tree maintenance needed for the duration of the contract and one year warranty period.
- C. Trees shall be guyed and protected as shown on the drawings.
- D. The TOWN reserves the right to reduce the quantity of proposed trees prior to installation if the existing site conditions prevent the appropriate installation methods. The CONTRACTOR shall not be paid for any tree not installed as long as the TOWN provides adequate prior notifications before installation.

1.09 RE-GRADE EXISTING SWALE

- A. Measurement for payment to re-grade existing swale will be based upon the number of square yards of swale actually cleared and graded all in accordance with the Contract Documents. This work shall include but is not limited too the removal of all vegetation, shrubs and trees with diameter less than or equal to 8inches.
- B. Payment for re-grading existing swales will be made at the unit price per square yards of clearing and grading named in the Bid Schedule which price shall constitute full compensation, including earthwork, removal of shrubs, removal of any protruding object, importing of fill material, disposal of excess material and protection of trees to remain.

1.10 FURNISH AND INSTALL SOD

- A. Measurement for payment to furnish and install sod will be based on upon the number of square yards of such sod actually furnished and installed, all in accordance with the requirements of the Contract documents.

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MEASUREMENT AND PAYMENT

- B. Payment for sod will be made at the unit price per square yards of sod named in the Bid schedule which price will constitute full compensation for furnishing and installing the sod, and shall include watering the sod. Further, new sod is to match previously existing type of grass. No additional compensations will be made for watering and maintaining sod for 30 days after installation.

1.11 CONSIDERATION FOR INDEMNIFICATION (OWNER/ENGINEER)

- A. Measurement for payment for consideration for indemnification of the OWNER and ENGINEER will be based upon the allowance named for such work, all in accordance with the requirements of the Contract Documents.
- B. Payment will be ten dollars for consideration for indemnification named in the bid schedule and shall constitute full compensation for indemnifying the OWNER and ENGINEER as specified on the Contract Documents.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01025

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this Section.

1.02 WORK INCLUDED

- A. Provide all labor, materials, necessary equipment and services to complete the clearing work, as indicated on the drawings.
- B. Under this section, the CONTRACTOR shall do all clearing, grubbing, root-raking, and necessary clean-up operations in connection with the construction of the work and its related site work.
- C. The work shall consist of the removal and disposal of trees, stumps, roots, limbs, brush, fences, asphalt, etc. from all project areas as designated on the drawings as specified herein, and as directed by the ENGINEER on the site.
- D. The CONTRACTOR shall remove all refuse, asphalt pavement, concrete pavement, glass, metal, stone, plaster, lumber, paper materials, and any and all trash found in clearing and adjacent areas as directed by the ENGINEER.
- E. The CONTRACTOR shall furnish all services, labor, transportation, materials, and equipment necessary for the performance of these operations. All clearing and cleanup operations shall be accomplished to the complete satisfaction of the ENGINEER.
- F. The CONTRACTOR shall strip all existing topsoil and stockpile it on-site in locations approved by the TOWN's Representative. All topsoil material shall be stockpiled within a haul distance of 3,000 feet.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 TREE REMOVAL AND TREE PRESERVATION

- A. No trees shall be removed if located outside of the right-of-way and dedicated easement.
- B. Within the rights-of-way and easements, no trees with a trunk diameter of 3" or greater at 4-1/2" above grade shall be removed without the approval of the ENGINEER with the exception of Australian Pines, Meleleuca or Florida Holly. Trees shall be evaluated on an individual basis in accordance with following:
 - a. Type and size of tree.
 - b. Proximity to proposed and/or existing utility lines and/or exfiltration trench.
 - c. Change in adjacent grades for swale excavation.
 - d. Proximity to proposed sidewalk.

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- e. Proximity to proposed edge of roadway.
- f. Living condition of the tree.

3.02 MEASUREMENT AND PAYMENT

- A. Measurement and payment for this item will be made per square yard and will include grading of swales per Section 02210.

END OF SECTION 02110

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this Section.

1.02 WORK INCLUDED

- A. The work included in this section consists of furnishing all labor, supplies equipment and materials necessary to complete the installation of all landscaping as shown on the Plans as base bid including the installation of sod and seeding as shown, as well as all other related responsibilities as described in these Specifications and accompanying plans.
- B. Installation: All plant materials included shall be of the specific size and quality indicated on the plans and in these specifications and shall be installed in strict accordance with sound nursery practices and shall include maintenance and watering for all work outlined on the plans and specifications until final acceptance.
- C. Quantities and Locations: The ENGINEER reserves the right to adjust the number and locations of the designated types and species to be used at any of the locations shown in order to provide for any modifications which might become necessary.

1.03 RELATED WORK

- A. Section 02910 - Sodding

1.04 QUALITY ASSURANCE

- A. Responsibility for Assuring Quality Work: The CONTRACTOR'S Superintendent shall be well versed in Florida plant material, planting operations, blue print reading, and coordination with other performing contracts or services in the job area.

All employees shall be competent and highly skilled in their particular job in order to properly perform the work assigned to them. The CONTRACTOR shall be responsible for maintaining the quality of the material on the job throughout the duration of the CONTRACT.

- B. Correct Grade of Plants: In the event that it becomes apparent that any nursery supplying plants for this work has knowingly and consistently represented the grade of plants as being higher than their actual grades as determined under these provisions, all plants already delivered from such sources shall be removed from the job at the CONTRACTOR'S expense, and no further plants will be accepted from such nursery until written evidence is submitted and confirmed that all material for delivery has been inspected and approved by inspectors of the State Plant Board as being of the grade as represented.
- C. Authority for Nomenclature, Species, Etc.: All plant material shall conform to the names given in Hortus Third, 1976 edition. Names of varieties not included therein conform generally with names accepted in the nursery trade.

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- D. Grade Standards: All plant materials shall be nursery grown except where specified as collected material, and shall comply with all required inspections, grading standards and plant regulations as set forth by the Florida Department of Agriculture's "Grades and Standards for Nursery Plants" revised 1973, or with any superseding specifications that may be called for on the Plans or in the Specifications. ALL PLANTS NOT LISTED IN THE GRADES AND STANDARDS FOR NURSERY PLANTS, shall conform to a Florida No. 1 as to: (1) Health and Vitality, (2) Condition of Foliage, (3) Root System, (4) Freedom from Pest or Mechanical Damage, (5) Heavily Branched and Densely Foliated according to the accepted normal shape of the species, or sport, (6) Form and branching habit.

- E. Balled and Burlapped (B&B) and Wire Balled and Burlapped (WB&B) Plants: These plants shall be properly protected until they are planted. The plant shall be handled only by the earth ball and not be the plant itself.

Any (B&B) or (WB&B) plant which shows evidence of having handled by a method other than the method outlined above, and resulting in a cracked or broken ball or of the roots being loosened within the ball shall be rejected.

For plants grown in soil of loose texture, which does not readily adhere to the root system, (especially in the case of large plant material), WB&B plants may be specified. For WB&B plants, before plant is removed from the hole, sound hog wire shall be placed around the burlapped ball and looped and tensioned until the burlapped ball is substantially packaged by the tightened wire netting, such as to prevent disturbing of the loose soil around the roots during handling. Any wire, synthetic material or chemically treated material will be removed from the rootball at planting time, all ties shall be removed from the rootball and around the trunk at planting.

- F. Container Grown Plants (CG): Any Container Grown (CG) plants, which have become "pot bound" or for which the top system is out of proportion (larger) to the size of the container, will not be acceptable.

With metal containers, unless the root-ball system slips easily and unbroken from the can, a nursery can-cutter shall be used to slit the can in such a way that the can may be opened fully.

CG plants shall not be removed from the can until immediately before planting, and with all due care to prevent damage to the root system.

- G. Submit to the ENGINEER the names and locations of nurseries proposed as sources of acceptable plant material. The ENGINEER reserves the right to visit the nursery to inspect and/or select the specified material.

- H. The ENGINEER will be included in the hand selecting of all Live Oaks for the project.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Inspection and Transporting: Movement of nursery stock shall comply with all Federal, State, and local laws and regulations. Therefore, required inspection certificates shall accompany each shipment, and shall be filed with the ENGINEER.

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Wrap root balls with burlap. Wire wraps burlap if root ball is not sufficiently compacted. Palms will not require burlap wrapping if the following requirements are met:

1. Dug from marl or heavy soil that adheres to roots and retains shape without shattering.
 2. Moistened material used to cover ball and roots not exposed to wind and sun.
 3. Transport material on vehicles large enough to allow plants not to be crowded. Plants shall be covered to prevent wind damage during transit and shall be kept moist, fresh and protected at all times. Such protection shall encompass the entire period, which the plants are in transit, being handled, or are in temporary storage.
- B. All plant material shall not remain on the work site longer than two (2) days prior to being installed.

1.06 SUBSTITUTIONS

- A. Substitutions of plant types or change in the size of plant material will only be permitted upon submission of documented proof that the particular plant type and size specified is not obtainable.
- B. Where B&B or WB&B plants are specified, CG plants of the same species, etc., will not be accepted. Where a B&B or WB&B is not specified on a particular plant material, B&B, WB&B or CG plants may be used provided they meet all specifications.

1.07 GUARANTEE

- A. All plant material shall be guaranteed for a minimum of one (1) calendar year from the time of final acceptance.

1.08 REPLACEMENT

- A. The guaranteeing of plant material shall be construed to mean the complete and immediate replacement of plant material if it is:
1. Not in a healthy growing condition.
 2. There is a question to its survival ability at the end of the guarantee period.
 3. It is dead.

1.09 SIZE, QUALITY AND GRADE OF REPLACEMENT

- A. Replacement plant material shall be of the same species, quality and grade as that of the plant to be replaced. The size of the replacement shall not necessarily be the same size as the original specified plant at its initial planting but shall closely match specimens of the same species. Replacements shall be guaranteed for a period equal to the originally specified guarantee. This guarantee period shall begin at time of plant replacement.

1.10 GUARANTEE NULL AND VOID

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- A. The guarantee shall be null and void for plant material which is damaged or dies as a result of "Act of God" limited to hail, freeze, lightening, winds which exceed hurricane force, and lethal yellowing, providing the plant was in a healthy growing condition prior to these "Acts of God".

PART 2 - MATERIALS

2.01 PLANT MATERIAL

- A. Florida No. 1: Except where another grade is specifically called for in the Plans, all plant material shall be no less than Florida No. 1 at the time of final inspection immediately prior to the acceptance by the TOWN.
- B. Habit of Growth: All plant material shall have a habit of growth that is normal for that species and shall be sound, healthy, vigorous, and free from insects, plant diseases, injuries, and dead limbs.
- C. Branching, Leafing, Measurements and Ball Sizes:
 - 1. Trees and Shrubs: Requirements for the measurement, branching character, ball diameter, depth and other standards shall follow the Code of Standards recommended by the American Association of Nursery Stock, Bulletin Z-60.1-1973 and as revised.
 - 2. Palms: Requirements for the measurement of clear trunk, clear wood and graywood ball diameter and depth shall comply with requirements as set forth by the Florida department of Agriculture's "Grades and Standards for Nursery Plants, Part II for Palms and Trees".
- D. Die-Back and Leaf-Drop: Plant material showing signs of die-back or leaf-drop will not be accepted and must be removed from the job immediately if so directed by the ENGINEER. Therefore, any plant material with tendencies toward leaf-drop or dieback must be root pruned early enough to provide a sound network of hair roots prior to relocation to the job site.
- E. Mechanical Destruction of Foliage: Mechanical destruction of foliage resulting from root pruning shall not effect more than 10% of the total foliage prior to planting on the job site. Loss of foliage caused by seasonal change will be accepted.
- F. Spanish Moss: If Spanish Moss (*Tillandsia usneoides*) exists on plant material, it shall be completely removed prior to planting on the job site.
- G. Palms: Before transporting, see Delivery, Storage and Handling; for requirements related to wrapping of root balls.
 - 1. Remove a minimum of fronds from the crown of the palms to facilitate transporting and handling.
 - 2. Palms with burn marks, nail holes, and frond boots on trunk shall not be accepted.
 - 3. Using untreated burlap strip or untreated cotton twine, tie Sabal Palmetto buds and leave in place until Palmetto is established. Tying shall be as set forth in Florida Department of

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Agriculture's "Grades and Standards for Nursery Plants". Tying of other palms shall be at the option of the CONTRACTOR.

4. To reduce head volume, Palm fronds may be taper trimmed by not more than one-third (1/3).
 5. Palm trees showing cable or chain marks and equipment scars shall be rejected.
- H. Chlorosis: The allowable level of Chlorosis in foliage shall be as set forth in the Florida Department of Agriculture's "Grades and Standards for Nursery Plants".

2.02 PLANTING SOILS

- A. General Type: All plant material with the exception of Sabal palmetto shall be planted with planting soil mixed with 50% original soil, if the soil is of good quality, as determined by the ENGINEER. The planting soils shall be sandy loam (50% sand, and 50% muck) typical of the locality. The soil must be taken from ground that has never been stripped, with a slight acid reaction (5.5 to 6.5 ph) and without an excess of calcium or carbonate. Soil shall be delivered in a loose friable condition.
- B. Special Type: Planting soil for palms shall be a good grade of salt free sand, which is free of all weeds.

2.03 WATER

- A. Water shall be potable, from municipal water supplies or other sources, which are approved by a public health department.

2.04 MULCH

- A. Mulch shall be Eucalyptus mulch or other approved non-native tree bark mulch. It must be uniformly shredded and be free from pieces of bark larger than 1", foreign matter, weed seeds and any other organic or inorganic material. Submit sample for approval. CONTRACTOR shall apply one application at initial installation and a second application prior to final acceptance.

2.05 FERTILIZER

- A. New Plant Material: Trees, palms and shrubs, fertilize with Agriform planting tablets, 20-20-5 formula, 21 gram or approved equal.
- B. New Ground Covers: Fertilize with an approved fertilizer of fifty percent (50%) or greater organic 6-6-6 or 8-8-8 with minor elements including, but not limited to, iron zinc and manganese.
- C. Composition of Quality: All fertilizer shall be uniform in composition and dry. Granular fertilizer shall be free flowing and delivered in manufacturers standard container with name of material, weight and guaranteed analysis printed on container. Tabletized fertilizer shall be delivered in unopened containers or boxes. All bags, containers or boxes shall be fully labeled

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with the manufacturer's analysis. Submit labels to ENGINEER for approval prior to placement of fertilizer.

- D. All shall comply with the State of Florida fertilizer laws.

2.06 PRUNING PAINT

- A. Pruning Paint shall be commercial tree paint, which is waterproof, antiseptic, adhesive, elastic and free of kerosene, water, cresol and any other substances harmful to plant material.

2.07 VEGETATIVE ROOT INHIBITOR

- A. A vegetative root inhibitor shall consist of a polypropylene fabric with root control time-release modules of Trifluralin with an effective life of 100 years or approved equal.
- B. Vegetative root inhibitor shall Bio-Barrier as manufactured by Reemay, Inc. or approved equal.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Utilities: The location and existence of utilities (overhead and underground) shall be thoroughly investigated and verified by the CONTRACTOR before the work begins in the area of said utilities. The CONTRACTOR shall exercise care in digging and work so as not to damage existing utilities in said areas, such as underground pipes, cables, wires, etc. Should such overhead or underground obstructions be encountered which interfere with planting, the ENGINEER shall be consulted immediately in order for a decision to be made on the relocations of plant material to clear such obstruction. The CONTRACTOR shall be responsible for the immediate repair of any damage to utilities caused by CONTRACTOR's work.

3.02 PREPARATION

- A. Staking Plant Locations: Plant locations must be staked or marked prior to plant hole excavation or placing on deck, by scaling the plants from existing features found on-site and shown on the plans or by given dimensions if shown.
- B. Spacing of Shrubs: Shrub beds located next to another bed, walkway, structure, etc., shall have the plants along the perimeter spaced so that the plants can mature properly without growing into the other bed, walkway, structure, etc.
- C. Excavation of Plant Holes: Excavation of plant holes shall be roughly cylindrical in shape with the sides approximately vertical. The ENGINEER reserves the right to adjust the size and shape of the plant hole and the location of the plant in the hole to compensate for unanticipated structures or unanticipated factors. All plant holes shall be sufficiently deep to allow the rootball to set on existing soil and have root collar at grade level. Plants shall be centered in the holes with the tree trunk locations scaled from existing permanent structures as shown on the drawings. Plants shall be set straight or plumb in locations. All plant holes to accommodate plants with ball sizes less than 24" in diameter shall be at least 18" greater than the diameter of the ball. All plant holes to accommodate plants with ball sizes two feet (2') and larger in diameter shall be at

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least twice the diameter of the ball. The excavated material from the plant holes may not be used to back-fill around the plant material. Such material shall be disposed of either on the project site or off the site as directed by the ENGINEER. Plant holes for shrub material planted in mass shall meet all requirements listed above for plant holes. However, they shall not be individual holes but one continuous hole or excavation. Plant holes for hedge material shall also meet all requirements listed above for plant holes, however, a continuous trench shall be used in lieu of individual holes.

3.03 INSTALLATION

A. Setting of Plants:

1. When lowered into the hole the plant shall rest on the prepared hole bottom such that the roots after settlement are level, or slightly above the level of its previous growth condition and the final level of the ground around the plant shall conform to the surrounding grade. The plants shall be set straight or plumb or normal to the relationship of their growth prior to transplanting. The ENGINEER reserves the right to realign any plant material after it has been set.
2. Palms of the Sabal species may be set deeper than the depth of their original growth condition in order to lessen the necessity for support or bracing. For such deeper planting however, it will be required that the underlying soil be friable and that the clear trunk requirements set forth in the plant list be maintained from the finished grade and NOT from the previous grade of the palm trees before it was transplanted.
3. Plant material of the shrub category and smaller must be handled by the ball only. Plant material too large for hand handling, if moved by winch or crane, must be thoroughly protected from chain, rope or cable marks, girdling, bark slippage, limb breakage and any other damage that might occur by improper handling or negligence.
4. All palm trees handled by the trunks must be wrapped with burlap and wood battens, held in place by banding strips as called for in the details.

B. Backfilling:

1. Use planting soils specified in Article 2.02, Planting Soil. Backfill to the bottom two thirds of the planting hole and firmly tamp and settle by watering as backfilling progresses. After having tamped and settled the bottom two thirds (2/3) of the hole, thoroughly puddle with water and fill remaining one third (1/3) of the hole with planting soil, tamping and watering to eliminate air pockets.

C. Application of Fertilizer:

1. Fertilize New Planting (Trees, Palms and Shrubs) as follows:

a.	Specified Container Size	Application Rate
	1 gallon container	1 tablet
	3 gallon container	2 tablets

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5 gallon container
7 gallon container

3 tablets
5 tablets

- b. Large tubs or boxes and B&B material shall receive one (1) tablet for each one-half (1/2) inch of trunk diameter (measured three (3) feet from ground). For large shrubs, one (1) tablet for each one (1) foot of height or spread.
- D. Mulch: Within 24 hours after planting, planting areas must be mulched as called for in these specifications. The mulch shall be uniformly applied to a depth of two (2) inches over all shrub, tree and groundcover areas and any areas indicated on the plans.
- E. Staking and Guying shall be installed within 24 hours; in accordance with details.
- F. Initial Watering: Initially, water the plant material to develop uniform coverage and deep-water penetration of at least six inches (6"). Avoid erosion, puddling, and washing soil away from plant roots.
- G. Hand Watering: Provide hand watering of plant material as necessary subject to weather conditions, to maintain healthy growing conditions until final acceptance. This shall be in addition to water received from irrigation system, if any.
- H. Pruning:
 - 1. The amount of general pruning shall be limited to the minimum necessary to remove dead or injured twigs and branches and to compensate for the loss of roots as a result of transplanting operations. Pruning shall be done in such a manner as not to change the natural habit of shape of a plant, and in accordance with National Arborist Association standards for pruning.
 - 2. All broken or damaged roots shall be cut off smoothly. The tops of all trees shall be pruned in a manner complying with standard horticultural practices. All cut surfaces of one-half inch (1/2") or more in diameter above ground level shall be treated with approved commercial tree paint.
- I. Weeding: In the event that weeds or undesirable vegetation becomes prevalent to such an extent that they threaten plant material, they shall be removed as directed by the ENGINEER. If necessary, the plant material and/or planting soil shall be replaced as needed to eliminate the weeds at the expense of the CONTRACTOR.

3.04 CLEANING AND PROTECTION

- A. Disposal of Trash: All debris and other objectionable material created through planting operations and landscape construction shall be removed completely on a daily basis from the job or as directed by the ENGINEER. Excess soil shall be disposed of as directed by the ENGINEER.
- B. Responsibility for Protection and Restoration of Property: The CONTRACTOR shall be responsible for all damage to property whether it is accidental or necessary for the completion of the contract.

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- C. Protection Against Mechanical Damage: The CONTRACTOR's responsibility for protection against mechanical damage shall include providing protection from vehicles and providing warning signs and barricades as might be necessary and CONTRACTOR shall repair, restore and replace any planting areas which become damaged as a result of any negligence of the CONTRACTOR or CONTRACTOR's employees in complying with these requirements. Coordination shall be with the TOWN and the ENGINEER.
- D. Responsibility Prior to Final Acceptance:
1. Maintenance shall begin immediately after each plant is planted and continue until final acceptance.
 2. Plants shall be watered by hose, soaking thoroughly each day for the first two weeks (14 calendar days) and every other day for the following two week period. Soaking then shall continue on a twice weekly basis for another period of three (3) weeks for material over five feet (5') height, amounting to a total of 28 days after installation of planting under five feet (5') and a total of 45 days for plants over five feet (5'). All watering is required without regard to an irrigation system.
 3. Plant maintenance shall include watering, pruning, weeding, cultivating, mulching, tightening and repairing of guys, stakes, braces, etc., replacement of sick or dead plants, resetting plants to proper grades or upright position and maintenance of the watering saucer, and all other care needed for proper growth of the plants. Plant material rejected during the course of the construction shall be removed within five (5) working days and replaced before the inspection for completion will be scheduled.
 4. During the maintenance period and up to the issuance of Certificate of Final Acceptance, the CONTRACTOR shall do all seasonal spraying and/or dusting of all planting. The materials and methods shall be in accordance with the highest standard nursery practices and as recommended by the TOWN, or Horticultural Engineer and approved by the ENGINEER, prior to implementation.
 5. Planting areas and plants shall be protected against trespassing and damage. If any plants become damaged or injured they shall be treated or replaced, as directed and in compliance with this specification. No work shall be done within or over planting areas or adjacent to plants without proper safeguards and protection.

3.05 MEASUREMENT AND PAYMENT

- A. Measurement and payment will be based on actual quantities installed as more specifically discussed and described in SECTION 01025 of MEASUREMENT AND PAYMENT.

END OF SECTION 02900

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this Section.

1.02 WORK INCLUDED

- A. The work included in this section consists of furnishing all labor, supplies, equipment and materials necessary to complete the installation of sod and associated materials herein after listed and as shown on the plans.

1.03 RELATED WORK

- A. Section 02900 - Landscape Work.

1.04 QUALITY ASSURANCE

- A. Sodding work shall be performed by a firm specializing in sodding.
- B. Source Quality Control: Ship sod with certificates of inspection as required by governing authorities.

Do not make substitutions. If specified sod is not obtainable, submit proof of non-availability to ENGINEER, together with proposal for use of equivalent material.

- C. Analysis and Standards: Package standard products with manufacturer have certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists, wherever applicable.

1.05 SUBMITTALS

- A. Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Plant and Material Certifications:
 - 1. Certificate of inspection as required by governmental authorities.
 - 2. Manufacturer's or vendor's certified analysis for soil amendments or fertilizer materials.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Packaged Materials: Deliver packaged materials in containers showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery, and while stored at site.
- B. Sod: Time delivery so that sod will be placed within 24 hours after stripping. Protect sod against drying.

C. Transporting:

1. Sod transported to the project in open vehicles shall be covered with tarpaulin or other suitable covers securely fastened to the body of the vehicle to prevent injury to the sod material. Closed vehicles shall be adequately ventilated to prevent overheating of the sod. Evidence of inadequate protection against drying out in transit shall be cause for rejection.
2. Sod shall be kept moist, fresh and protected at all times. Such protection shall encompass the entire period during which the sod is in transit, being handled, or in temporary storage.
3. Upon arrival at the temporary storage location or the site of work, sod shall be inspected for proper shipping procedures. Should the roots be dried out, the ENGINEER will reject the sod. When sod has been rejected, the CONTRACTOR shall remove it at once from the area of the work and replace it.
4. Unless otherwise authorized by the ENGINEER, the CONTRACTOR shall notify the ENGINEER at least 48 hours in advance of the anticipated delivery date of sod material. A legible copy of the invoice, showing species and variety of sod included for each shipment shall be submitted to the ENGINEER. Certificate of Inspection must accompany each sod shipment.

1.07 JOB CONDITIONS

- A. Begin installation of sod after preceding related work is accepted.
- B. Environmental Requirements:
 1. Install sod during months acceptable to the ENGINEER.
 2. Do not install sod on saturated soil.
- C. Protection: Erect signs and barriers to control vehicular traffic.
- D. Utilities: Determine location of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate, as required. Maintain grade stakes set by others until parties concerned mutually agree upon removal.

1.08 SEQUENCING AND SCHEDULING

- A. Correlate planting with specified maintenance periods to provide maintenance from date of substantial completion.
- B. Coordination with sodding: Plant trees, palms and shrubs after final grades are established and prior to planting of sod, unless otherwise acceptable to ENGINEER. If planting of trees, palms and shrubs occurs after sod work, protect sod areas and promptly repair damage to lawns resulting from planting operations.

1.09 SPECIAL PROJECT WARRANTY

- A. Warranty sod through specified lawn maintenance period, and until final acceptance.

PART 2 - PRODUCTS

2.01 PLANTING SOIL

- A. Provide new planting soil that is fertile, friable, natural loam, surface soil, reasonably free of subsoil, clay lumps, brush, weeds and other litter, and free of roots, stumps, stones larger than 1 inch in any dimension, and other extraneous or toxic matter harmful to plant growth.
- B. Obtain planting soil from local sources or from areas having similar soil characteristics to that found at project site.
- C. Refer to Section 162 of the "FDOT Standard Specifications for Road and Bridge Construction" dated 1991 for Topsoil Specifications.

2.02 COMMERCIAL FERTILIZER

- A. For sod, provide fertilizer with percentage of nitrogen required to provide not less than 1 pound of actual nitrogen per 1,000 sq. ft. of lawn area and not less than 4 percent phosphoric acid and 2 percent potassium. Provide nitrogen in a form that will be available to sod during initial period of growth; at least 50 percent of nitrogen to be organic form.

2.03 SOD

- A. Provide strongly rooted sod, not less than 2 years old, free of weeds and undesirable native grasses, and machine cut to pad thickness of 1-1/2 inch (plus or minus 1/4 inch), excluding top growth and thatch. Provide only sod capable of vigorous growth and development when planted (viable, not dormant).
- B. Provide sod uniform pad sizes with maximum 5 percent deviation in either length or width. Broken pads with uneven ends will not be acceptable. Sod pads incapable of supporting their own weight when suspended vertically with a firm grasp on upper 10 percent of pad will be rejected.
- C. Provide sod composed of the following:
 - 1. Bahia sod
 - 2. St. Augustine
- D. Sod shall be nursery grown on cultivated mineral agricultural soils. Sod shall have been mowed regularly and carefully maintained from planting to harvest.
- E. American Sod Producers Association (ASPA) Grade: Nursery Grown or Approved. Field grown sod is not acceptable.
- F. Furnished in pads:

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SODDING**

1. Size:
 - a. Length: 24 inches plus or minus 5%.
 - b. Width: 18 inches plus or minus 5%
 - c. Thickness: 1-1/2 inches excluding top growth and thatch.

2. Not stretched, broken or torn.

G. Uniformly mowed height when harvested: 2 inches.

H. Thatch: Maximum 1/2 inch uncompressed.

I. Inspected and found free of disease, nematodes, pests, and pest larvae, by entomologist of State Department of Agriculture.

J. Weeds:

1. Free of Bermuda grass, nut grass or other objectionable weeds.

K. Uniform in color, leaf texture, and density.

2.04 WATER

A. Water shall be potable, from municipal water supplies or other sources which are approved by a public health department.

2.05 FERTILIZER

A. FS O-F-241c (1), Grade A or B.

B. The chemical designation shall be 1-8-8, with at least 50 percent of the nitrogen from a non-water-soluble organic source.

2.06 HERBICIDES

A. As recommended by the State Department of Agriculture.

2.07 STAKES

A. Softwood, 3/4-inch diameter, 8-inch length.

PART 3 - EXECUTION

3.01 PREPARATION OF GROUND SURFACE

A. Before mixing, clean planting soil of roots, plants, sods, stones, clay lumps, and other extraneous material harmful or toxic to plant growth.

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SODDING

- B. Mix specified fertilizers with planting soil as necessary at rates specified. Delay mixing fertilizer if planting will not allow placing of planting soil within a few days.
- C. For sod, mix planting soil either prior to planting or apply on surface of topsoil and mix thoroughly before planting.

3.02 PREPARATION OF PLANTING BEDS

- A. Loosen subgrade of lawn areas to a minimum depth of 4 inches. Remove stones measuring over 1 1/2 inches in any dimension. Remove sticks, stones, rubbish, and other extraneous matter. Limit preparation to areas, which will be planted promptly after preparation.
- B. Spread planting soil to minimum depth of 2" or as required meeting lines, grades, and elevations shown, after light rolling and natural settlement. Add specified fertilizer and mix thoroughly into upper 4 inches of topsoil.
- C. Place approximately 1/2 of total amount of topsoil required. Work into top of loosened subgrade to create a transition layer and then place remainder of planting soil. Add specified soil amendments and mix thoroughly into upper 4 inches.
- D. Where sod is to be planted in areas that have not been altered or disturbed by excavating, grading, or stripping operations, prepare soil for lawn planting as follows: Till to a depth of not less than 6 inches. Apply fertilizers as specified. Remove high areas and fill in depressions. Till soil to a homogenous mixture of fine texture, free of lumps, clods, stones, roots and other extraneous matter.
- E. Prior to preparation of unchanged areas, remove existing grass, vegetation and turf. Dispose of such material outside of TOWN's property. Do not turn existing vegetation over into soil being prepared for lawns.
- F. Allow for sod thickness in areas to be sodded.
- G. Apply specified commercial fertilizer at rates specified and thoroughly mix into upper 2 inches of topsoil. Delay application of fertilizer if lawn planting will not follow within a few days.
- H. Fine grade sod areas to smooth, even surface with loose, uniformly fine texture. Roll, rake, and drag lawn areas, remove ridges and fill depressions, as required to meet finish grades. Limit fine grading to areas, which can be planted immediately after grading.
- I. Moisten prepared sod areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting lawns. Do not create a muddy soil condition.
- J. Restore sod areas to specified condition, if eroded or otherwise disturbed, after fine grading and prior to planting.

3.03 SODDING NEW LAWNS

- A. Lay sod within 24 hours from time of stripping.

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- B. Lay sod to form solid mass with tightly fitted joints. Butt ends and sides of sod strips; do not overlap. Stagger strips to offset joints in adjacent courses. Work from boards to avoid damage to subgrade or sod. Tamp or roll lightly to ensure contact with subgrade. Work sifted soil into minor cracks between pieces of sod; remove excess to avoid smothering of adjacent grass.
- C. Anchor sod on slopes with wood pegs to prevent slippage.
- D. Water sod thoroughly with a fine spray immediately after planting.

3.04 MAINTENANCE

- A. Begin maintenance immediately after planting.
- B. Maintain lawns for not less than 30 days after substantial completion, and longer as required to establish an acceptable lawn.
- C. Maintain sod by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, regrading and replanting as required to establish a smooth, acceptable lawn, free of eroded or bare areas.
- D. Mowing:
 - 1. Whenever grass reaches a height of 3 inches, it shall be cut back to 2" with all clippings removed.
 - 2. After two mowings, CONTRACTOR shall topdress the sod with an application of fertilizer at the rate of 1 pound of actual nitrogen per 1,000 square feet.

3.05 CLEANUP AND PROTECTION

- A. During sodding work, keep pavements clean and work area in an orderly condition.
- B. Protect sodding work and materials from damage due to landscape operations, operations by other CONTRACTORS and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged sod work as directed.

3.06 INSPECTION AND ACCEPTANCE

- A. Sod areas will be accepted when in compliance with all the following conditions:
 - 1. The roots are thoroughly attached to the soil.
 - 2. Absence of visible joints.
 - 3. All areas show a uniform stand of specified grass in healthy condition.
 - 4. At least 60 days have elapsed since the completion of the work in this section.
- B. When inspected sod work does not comply with requirements, replace rejected work and continue specified maintenance until reinspected by ENGINEER and found to be acceptable. Remove rejected plants and materials promptly from project site.

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C. Procedure:

1. The CONTRACTOR shall submit a request for acceptance in writing to the ENGINEER. Request must be received not less than 10 days before the anticipated date for final inspection.
2. Upon completion of all repairs and/or renewals required by ENGINEER at the inspection, the ENGINEER will verify the completeness of the work and then notify the TOWN in writing that the work is accepted.
3. Upon completeness, the TOWN will assume maintenance of all sod areas.

3.07 MEASUREMENT AND PAYMENT

- A. Measurement and payment will be based on actual quantities installed as more specifically discussed and described in SECTION 01025 of MEASUREMENT AND PAYMENT.

END OF SECTION 02910

